

WHAT IS CLAIMED IS:

1. A drive mechanism for driving a movable portion with respect to a stationary portion, comprising a connecting member that connects the
5 stationary portion and the movable portion to each other, the connecting member having at least one of a monolithic planar 3-joint link mechanism and a monolithic planar 4-joint link mechanism.
- 10 2. A drive mechanism according to Claim 1, further comprising a deformation member provided at least one of: between the stationary portion and the at least one of the monolithic planar 3-joint link mechanism and the monolithic planar 4-joint link
15 mechanism; and between the movable portion and the at least one of the monolithic planar 3-joint link mechanism and the monolithic planar 4-joint link mechanism, the deformation member being capable of deforming with respect to a first direction and being
20 a rigid body with respect to a second direction orthogonal to the first direction.
3. A drive mechanism according to Claim 2, wherein the deformation member is an elastic member
25 having one degree of freedom and capable of deforming in a rotation direction thereof.

4. A drive mechanism according to Claim 1,
further comprising a deformation member provided at
least one of: between the stationary portion and the
at least one of the monolithic planar 3-joint link
5 mechanism and the monolithic planar 4-joint link
mechanism; and between the movable portion and the at
least one of the monolithic planar 3-joint link
mechanism and the monolithic planar 4-joint link
mechanism, the deformation member being capable of
10 deforming with respect to a first direction and being
capable of deforming also with respect to a second
direction orthogonal to the first direction.

5. A drive mechanism according to Claim 4,
15 wherein the deformation member is an elastic member
having two degrees of freedom and capable of
deforming in a rotation direction thereof.

6. A drive mechanism according to Claim 1,
20 wherein the monolithic planar 3-joint link
mechanism has a first input link, a first connection
link, a second connection link, a second input link,
a first joint arranged between the first input link
and the first connection link, a second joint
25 arranged between the first connection link and the
second connection link, and a third joint arranged
between the second connection link and the second

input link, and

wherein the drive mechanism comprises an input element for imparting a displacement to at least one of the first input link and the second input link,

5 and controls deformation of an output portion provided in one of the first connection link and the second connection link by imparting the displacement to the at least one of the first input link and the second input link.

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7. A drive mechanism according to Claim 6, wherein a direction of the displacement imparted to the at least one of the first input link and the second input link is parallel to a plane defined by
15 the first joint, the second joint, and the third joint.

8. A drive mechanism according to Claim 6, wherein a direction of the displacement imparted to
20 the at least one of the first input link and the second input link is substantially parallel to a straight line connecting between the first joint and the third joint.

25 9. A drive mechanism according to Claim 6, wherein the first joint, the second joint, and the third joint each comprise an elastic hinge.

10. A drive mechanism according to Claim 6,
wherein the input element has any one of a fluid
sealing means, a linear motor, and a feed screw, the
fluid sealing means being one of a fluid cylinder, a
5 piezoelectric element, and a bellows.

11. A drive mechanism according to Claim 1,
wherein the monolithic planar 4-joint link
mechanism has a first input link, a first connection
10 link, an output link, a second connection link, a
second input link, a first joint arranged between the
first input link and the first connection link, a
second joint arranged between the first connection
link and the output link, a third joint arranged
15 between the output link and the second connection
link, and a fourth joint arranged between the second
connection link and the second input link, and

wherein the drive mechanism comprises an input
element for imparting a displacement to at least one
20 of the first input link and the second input link,
and controls displacement of an output portion
provided in the output link by imparting the
displacement to the at least one of the first input
link and the second input link.

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12. A drive mechanism according to Claim 11,
wherein a direction of the displacement imparted to

the at least one of the first input link and the second input link is substantially parallel to a plane defined by the first joint, the second joint, the third joint, and the fourth joint.

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13. A drive mechanism according to Claim 11, wherein a direction of the displacement imparted to the at least one of the first input link and the second input link is substantially parallel to a straight line connecting between the first joint and the fourth joint.

14. A drive mechanism according to Claim 11, wherein the first joint, the second joint, the third joint, and the fourth joint each comprise an elastic hinge.

15. A drive mechanism according to Claim 11, wherein the input element has any one of a fluid sealing means, a linear motor, and a feed screw, the fluid sealing means being one of a fluid cylinder, a piezoelectric element, and a bellows.

16. A drive mechanism according to Claim 1, wherein at least three of the connecting members are provided between the stationary portion and the movable portion, and

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wherein the drive mechanism performs positional control on the movable portion with respect to the stationary portion in 6 axis directions by controlling the at least three the connecting members.

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17. A drive mechanism according to Claim 16, further comprising a sensor that measures a relative position of the movable portion with respect to the stationary portion in the 6 axis directions,

10 wherein the drive mechanism performs the positional control on the movable portion with respect to the stationary portion by using an output value from the sensor.

15 18. An exposure device comprising:

an optical system having at least one optical element for guiding light from a light source to an object to be subjected to exposure; and

the drive mechanism according to claim 1,

20 wherein the at least one optical element is at least one of an optical element supported by the movable portion, an optical element fixed substantially integrally to the movable portion and an optical element that is the movable portion.

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19. A device manufacturing method comprising the steps of:

performing exposure on the object to be
subjected to exposure by using the exposure device
according to claim 18; and

developing the object that has been subjected
5 to the exposure.

20. An optical equipment comprising:

an optical system having at least one optical
element for guiding light; and

10 the drive mechanism according to claim 1,

wherein the at least one optical element is at
least one of an optical element supported by the
movable portion, an optical element fixed
substantially integrally to the movable portion and
15 an optical element that is the movable portion.